UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

May 30, 1998

FINDING OF NO SIGNIFICANT IMPACT

To Interested Agencies, Officials, Public Groups and Individuals,

The U.S. Environmental Protection Agency (EPA) has performed an environmental assessment in accordance with the procedures at 40 CFR Part 6, "*Procedures for Implementing the Requirements of the Council on Environmental Quality on the National Environmental Policy Act*," for the following proposed action:

Proposed Action: Awarding of U.S. Environmental Protection Agency grant funds from the Border Environmental Infrastructure Fund for the Comprehensive Wastewater Treatment Plant Project of the city of Reynosa.

Applicant: Municipal Commission of Drinking Water and Sewerage System, city of Reynosa, State of Tamaulipas, Mexico.

Total Project Cost: Approximately $82.9 million
(Proposed funding through a combination of federal grants from the United States, and federal and local funds from Mexico. Specific funding amounts are not known at this time.)

Proposed Project. The city of Reynosa is located in the northern part of the State of Tamaulipas, Mexico, at latitude 26°04' and longitude 98°17, and elevation of approximately 65.6 feet above mean sea level. Its wastewater treatment system has exceeded its design life and is presently hydraulically overloaded. Areas of primary concern include the downtown Cumbres area, and the Rodriguez, Aquiles Serd n, Lazaro Cardenas, El Anhelo, Petrolera and Industrial Maquiladora municipalities, all affected by collapsed pipes; the Panuco, Centro Viejo, Del Valle and Del Valle No. 2, Mainero and Reynosa collector systems, all systems with serious rain water intrusion problems; Benito Juarez, Reynosa, Industrial Maquiladora, Casa Bella, Lucio Blanco and Esperanza areas, all prone to flooding. The pumping stations also are not functioning properly. The population of the city is expected to exceed 680,000 by the year 2006 and 1,003,916 by the year 2016.

The city plans to rehabilitate its wastewater treatment plant No.1 (WWTP1), increase the capacity of wastewater treatment plant No.2 (WWTP2), and construct wastewater treatment plant No.3 (WWTP3). The completed project will require approximately 531 acres (215 hectares) of land which includes acquiring 37 acres (15 hectares) for WWTP1, 185 acres (75 hectares) for WWTP2, and 197.5 acres (80 hectares) for WWTP3. The WWTP1 is located east of the city of Reynosa and is bounded by the Reynosa-Rio Bravo highway on the east, the Rio Grande River on the north, the railroad right-of-way and the Anzalduas canal on the south, and the Industrial Paraiso, Delicias and

Ampliacion Delicias colonias on the west. The WWTP2 site is located to the southwest of the city of Reynosa, bordering the Rhode canal to the south of the El Paraiso recreational center, on the Monterrey-Rio Bravo and Rhode canal crossing of the Libramiento. The site for the WWTP3 is located southeast of the city of Reynosa, east of the Pharr-Cuidad Victoria International Bridge highway, and south of the Anzalduas canal. The sewer system will be designed to handle a flow of 53 million gallons per day (MGD). This will require a combined capacity of 17 MGD for WWTP1 and WWTP2, and 18.7 MGD for WWTP3. The service area for the sewage system is approximately15 miles long and 9 miles wide.

Finding. The EPA has performed an environmental assessment (EA) of the Environmental Information Document prepared for the city of Reynosa by Consorcio de Ingenieria Interdisciplinaria, S.A. de C.V. and finds that no significant impacts have been identified to require an increase in the scope of the assessment.

On the basis of this EA, the Regional Administrator has determined that awarding of grant funds assistance to the city for the project will not result in significant adverse impacts on the human environment and that an Environmental Impact Statement (EIS) is not warranted. Comments regarding this determination not to prepare an EIS will be accepted during the 30-day period following the public notice of this FNSI. Address all comments and requests for review of the administrative record supporting this determination to:

Robert D. Lawrence (6EN-XP)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733
Telephone: (214) 665-2258

ENVIRONMENTAL ASSESSMENT

FOR THE AWARDING OF

U.S. ENVIRONMENTAL PROTECTION AGENCY

GRANT FUNDS

FROM THE BORDER ENVIRONMENTAL INFRASTRUCTURE FUND

FOR THE WASTEWATER TREATMENT PLANT (WWTP) PROJECT

FOR THE CITY OF REYNOSA, STATE OF TAMAULIPAS, MEXICO

United States Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202

Approved: //S// 5/11/98
Gregg A. Cooke Date
Regional Administrator

TABLE OF CONTENTS

1.0 PURPOSE AND NEED FOR ACTION

1.1 General Information.

Proposed Action: Awarding of U.S. Environmental Protection Agency grant funds from the Border Environmental Infrastructure Fund for the Comprehensive Wastewater Treatment Plant Project of the city of Reynosa.

Applicant: Municipal Commission of Drinking Water and Sewerage System, city of Reynosa, State of Tamaulipas, Mexico.

Total Project Cost: Approximately $82.9 million
(Proposed funding through a combination of federal grants from the United States, and federal and local funds from Mexico. Specific funding amounts are not known at this time.)

1.2 Proposed Project. The city of Reynosa is located in the northern part of the State of Tamaulipas, Mexico, at latitude 26º04' and longitude 98º17', and elevation of approximately 65.6 feet above mean sea level. Its wastewater treatment system has exceeded its designed life and is presently hydraulically overloaded. To accommodate its accelerated growth, the city proposes to rehabilitate the wastewater treatment plant No.1 (WWTP1), increase the capacity of the wastewater treatment plant No.2 (WWTP2), and construct wastewater treatment plant No.3 (WWTP3). At the present development rate, the population is projected to reach 680,000 by the year 2006 and 1,003,916 by the year 2016.

The areas of primary concern include the downtown Cumbres area with collapsed pipelines at four locations. The Panuco, Centro Viejo, Del Valle and Del Valle No.2, Mainero collector lines have serious problems with rain water intrusion. The municipalities of Rodriguez, Aquiles Serd n, Lazaro Cardenas, El Anhelo, Petrolera have collapsed sewer lines. Flooding problems affect Benito Juarez, Reynosa, Industrial Maquiladora municipality, Casa Bella, Lucio Blanco and Esperanza. The pumping stations are also not functioning properly.

The sewerage system project will require approximately 531 acres of land which includes the 111 acres of the existing WWTP1, an additional 420 acres for the WWTP1 (37 acres), the WWTP2 (185 acres), and the WWTP3 (197.5 acres). The sewer system will be designed to handle a flow of 53 million gallons per day (MGD), which will require a combined capacity of 17 MGD in both WWTP1 and WWTP2 and a capacity of 18.7 MGD for the WWTP3. The WWTP1 site is located east of the city of Reynosa, bounded on the east by the Reynosa-Rio Bravo highway, on the north by the Rio Grande River, on the south by the railroad right-of-way and the Anzalduas canal, and on the west by the Industrial Paraiso, Delicias and Ampliacion Delicias colonias. The WWTP2 is located southwest of the city of Reynosa bordering the Rhode canal and south of the El Paraiso recreational center, in proximity of CERESO Dos, on the Monterrey-Rio Bravo and Rhode canal crossing of the Libramiento. The land for WWTP3 is located southeast of the city of Reynosa, east of the Pharr-Cuidad Victoria International Bridge

highway and south of the Anzalduas canal. The service area is 15 miles long and 9 miles wide, stretching from the Monterrey highway on the west side of Reynosa, to just east of the airport on the east side of the city, and north to the Rio Grande, where it stretches for 9 miles, and finally south to the Anzalduas canal.

1.3 Recommendation. The EPA has performed an environmental assessment (EA) of the Environmental Information Document prepared for city of Reynosa by Consorcio de Ingenieria Interdisciplinaria, S.A. de C.V. and finds that no significant impacts have been identified to require an increase in the scope of the assessment. On the basis of this EA, the Regional Administrator has determined that awarding of grant funds to assist in the funding of this project will not result in significant adverse impacts on the human environment and that an Environmental Impact Statement (EIS) is not warranted.

2.0 ALTERNATIVES.

2.1 Alternatives Available to the EPA.

Approve the Grant Funding for the Project as Proposed. EPA can recommend approval of the grant funding for the proposed purpose.

Grant Funding of a Modified Project. Information received during the EA process could result in the identification of significant adverse impacts that require modification. Modification of the project to mitigate the impacts may allow the EPA to accept the project as modified and recommend approval of the grant funding.

No Action. A determination that the project as proposed could result in potentially significant adverse impacts to the environment that cannot be satisfactorily mitigated would preclude a recommendation of approval of the grant funding. An EIS would then be recommended to evaluate the potentially significant impacts. The EIS process includes a scoping meeting to identify critical facts and issues, a Draft EIS, a public comment period on the Draft EIS, a public hearing on the Draft EIS, the Final EIS, a public comment period on the Final EIS, and a Record of Decision.

2.2 Alternatives Considered by the Applicant.

Wastewater Treatment Alternatives

WWTP1 Alternatives:

Anaerobic lagoons with plug flow modified facultative lagoons is the alternative selected as the best option for the rehabilitation of the WWTP1.

Anaerobic lagoon with facultative lagoon was rejected because only 57 percent of the present flow would be treated.

Anaerobic lagoon with extended facultative lagoon was rejected because the required additional land would almost double the amount present surface area of the lagoon and would require the removal of office and laboratory buildings, tanks and drying beds.

WWTP2 Alternatives:

Five anaerobic lagoons with five facultative lagoons was the alternative selected as the best option for expansion of the WWTP2. This option allows meeting of the effluent limits without adding chlorine keeping operational and maintenance costs low and allowing for modular expansion as required by population growth. The disadvantage of this system is that it will require a relatively large land area and would involve several land owners through land acquisition.

Anaerobic lagoon with aerated facultative and sedimentation lagoon was rejected because of the need to chlorinate in order to meet coliform parameters, the higher operational and maintenance costs due to energy and electro-mechanical equipment consumption, and the need for higher training of personnel to operate the system.

Aerated facultative lagoons with sedimentation and chlorination lagoons was rejected due to the higher operational and maintenance costs and the need for chlorination to meet the fecal coliform discharge conditions.

WWTP3: The treatment process selected for WWTP3 will be similar to that of the other two lagoon systems and will require 197.5 acres for construction.

Site Selection Alternatives

WWTP1: The site for the WWTP1 was selected by dividing the city of Reynosa into quadrants. It was concluded that the best quadrant for construction of the treatment plants was quadrant three, followed by quadrant four. Due to the vastly different planning conditions and social setting that existed 26 years ago, the WWTP1 is located in quadrant two, which is presently not desirable for an infrastructure such as this facility demands. This facility will remain in quadrant two.

WWTP2 and WWTP3. Two alternative sites were considered for the WWTP2 and WWTP3 based on the *Technical Planning of Drinking Water, Sewage and Sanitation of the Master Plan* for the Institutional Consolidation and Development of the Municipal Commission of Drinking Water and Sewage Systems (COMAPA) for the city of Reynosa. The least expensive alternative called for sending all the wastewater to one plant. The selected alternative calls for the construction of WWTP3 and dividing the wastewater between the two plants. This alternative was considered the more suitable because it allows for phased expansion through modular construction.

The WWTP3 will be located in quadrant three, near the Pharr-Cuidad Victoria

International Bridge highway and the Reynosa-Matamoros highway.

3.0 AFFECTED ENVIRONMENT AND PREDICTED ENVIRONMENTAL IMPACTS

3.1 Land Resources.

Site and Land Use. The land use for the WWTP1 site will continue as it has been since the plant was constructed in 1970. The site of the WWTP2 is presently being used for limited agriculture because of its high clay content. Land clearing and leveling, and construction of the lagoons will be promptly executed in order to control the erosion and limit sedimentation. According to letters issued by the Management of Urban Development on November 13, 1997, and by the Municipality President on November 12, 1997, there are no guidelines or instructions in the State's Urban Development and the Municipalities' Urban Development Guidelines that restrict the implementation of the proposed project.

Transportation. Temporary disruptions in school, security, fire service, drinking water, energy and sewer services may result from the modification of traffic caused by the opening of streets to install the sewer lines. Alternate traffic routes will be developed to allow for the flow of traffic. Residents will be notified of service interruptions to allow them to can take the necessary precautions.

Visual Aesthetics. In general, any activity that changes the quality or the characteristics of the environment will have an effect of the aesthetics of an area. Aesthetic impacts from sewer line channels and pipe lines will be temporary and localized. The majority of these adverse effects will be reduced by using an adequate pedestrian and re-vegetation programs.

3.2 Water Resources.

The quality of the effluent discharge as conferred to COMAPA has been considered appropriate. Both of the receiving waters of the discharge, the Anzalduas and the Rhode canals, are classified Type "A" streams in accordance with the Federal Law of Rights, the NOM-001-ECOL-1996 application, which establishes the maximum permitted level of pollutants in sewage discharge in national water and property, published on January 6, 1997, in the Diario Official de la Federacion.

The restoration of WWTP1 will include procedures to allow the sewer system to continue operating during construction. Heavy rainfall, however, may affect the functioning of the sewer system and force discharges of under treated water. Some sewage and storm water may be discharged into the natural drainage ways and used for agricultural irrigation. Water from Rhode canal will be used in Irrigation District No. 25 "Bajo Rio Bravo," and water from the Anzaldulas canal will be used in Irrigation District No. 26 "Bajo Rio San Juan." The 56.7 MGD monthly average flow of the Rhode canal will serve to dilute the maximum 17 MGD effluent discharge by a factor of 3.5. The concentration of organic and biological pollutants in the discharge entering the tributaries will be diluted by this factor before being used for agricultural irrigation. The

dilution factor in the Anzalduas canal will also be significant prior to use of the water for irrigation.

The Management of Drinking Water and Sanitation Projects of the Comision Nacional del Agua (National Water Commission) by letter dated November 13, 1997, stated that the technology used in the sewage treatment plants for the city of Reynosa is the most technically and economically viable option of those considered.

3.3 Air Quality.

The air quality will be temporarily affected during construction activities by the emissions of fuel combustion from machinery and trucks. The sulfur, carbon and nitrogen oxides produced will affect the health of the operators and the local communities. The generation of odors and gases associated with the anaerobic conditions of the sewage in the flow lines and the lift stations will last until the work is finished. A gas emission control program will be put into practice and the equipment operators will be provided with protection. The construction activities of the lagoons will be completed as soon as possible.

In the operation stage, the generation of odors may be detectable within a one-mile radius from the sewage treatment plants. Odors may cause annoyances for the population. Recommended mitigation actions include a micro meteorological station and an air quality monitoring program to determine possible measures to mitigate the odor problems. Evergreen bushes and trees will be used as wind breakers to buffer surrounding areas from odors. Another option may include the introduction of mechanical aeration systems in the anaerobic lagoons that allow the gases to be eliminated without altering the lower layer of the lagoon water where the anaerobic processes take place.

Noise. The use of equipment and vehicles will primarily be during the construction phase of the project. Operators and the inhabitants will be affected by the noise in the neighboring areas, mainly in particular zones such as offices, schools, libraries and laboratories and in other places that require mental concentration. It may also have a negative effect on wildlife. Operators will be instructed on safety and protection procedures before initiating the construction and operation of the sewer and sanitation system.

3.4 Biotic Resources.

The vegetation of the area is of the *xerofilo* scrub variety. There are two types of scrub: medium lower scrub (Mezquite, Gobernadora, Carriso, Chaparros, Vara Dulce, Nopal, Cojotillo, Organillo, Sangre de Dragon, Guayacan, Junco) and sub-protected scrub (Barreta, Cenizo, Ebanillo). Natural pastures represent 10 to 12 percent of the area. This resource is generally not of high economic value and is not in danger of extinction. The bird group is most significant in this zone, most of which are migratory and are mostly found along the banks of the Rio Grande.

Most of the wildlife has been displaced to other zones of relatively undisturbed areas by

the advancing urbanization. Some species, like the mountain cat and the *berrendos*, appear to be in serious decline or appear to be near extinction due to uncontrolled hunting and the growing urbanization. The land turtle (*Gopherus berlandieri*), listed as a species in risk of extinction, and the rattlesnake (*Crotalus sp.*), are considered endangered species.

Biotic Changes. The primary change will be the alteration of the vegetation cover. Although the sewer lines primarily will be installed in paved areas, there will be some lines that will require the removal of vegetation from fields. Project work will eliminate the existing vegetation covering that may provide some habitat areas and will alter the associated faunal characteristics. However, only the areas of proposed construction will be affected. The surrounding areas will be avoided. Once the facilities are constructed, the surrounding areas will be vegetated to provide compatible habitat for different species. Restricting construction activity, and restoring the paved areas as soon as possible will lessen the impacts. The resulting impacts to the environment will not be significant.

3.5 Cumulative Impacts and Other Environmental Considerations.

Wetlands/Flood plain. The proposed WWTP sites are located in a developed urban area. By letter dated November 21, 1997, to COMAPA, the Mexican section of the Comision Internacional de Limites y Aguas (CILA) issued a "no objection" declaration to the work involved in this project.

Educational, Parks and Recreational Facilities. The city of Reynosa comprises an urban area of approximately 8,010 acres. At present, the growth trend is toward the southwest and southeast where the land is being developed primarily for residential and industrial purposes. The eastern zone includes the industrial park and a group of fast-growing colonias. The southwestern zone relies on a development area established by the Plan Sub-regional de Ordenamiento Territorial de Reynosa-Rio Bravo (Reynosa-Rio Bravo Sub-regional Urban Development Plan). This area consists of about 5,436 acres and is estimated to have a population of approximately 150,000 inhabitants within the next ten years. The Laguna Escondidia zone is located near the center of the city of Reynosa. La Laguna Escondidia is a protected natural preserve. Several uses have been proposed for this zone, including tourism and recreational, residential, commercial and industrial uses.

Cultural Resources. The Instituto Nacional de Antropologia e Historia in Tamaulipas (National Institute of Anthropology and History) issued a determination that the cultural heritage and historic monuments will not be affected by the construction of the sewage treatment plants.

Endangered Species. Most of the wildlife in the area has been displaced to other relatively undisturbed areas by urbanization. The land turtle (*Gopherus berlandieri*), listed as a species in risk of extinction, and the rattlesnake (*Crotalus sp.*), are considered endangered species. The above-mentioned species are limited due to the extensive urban development in this area. An adequately planned vegetation surrounding the WWTPs will provide compatible habitat for certain types of species. Impacts from the proposed project will be minimal and of temporary

duration, primarily occurring during the construction of the pipelines.

Social Well-being and Economics. In the municipality of Reynosa, gastrointestinal and parasitic illnesses is the third largest cause of death, especially for children under the age of five. The greatest cause of death is acute respiratory diseases resulting from generated dust compounded by the sharp changes in temperature. The ratio between rates of intestinal infections to respiratory infection is approximately 1 to 5. As a result, every attempt to improve these systems (drinking water and sewage treatment) will serve to alleviate the death rate caused by gastrointestinal illnesses.

The municipality's main activities are commerce and trade with 50 percent of the working population employed in this sector. Another 30.5 percent work in the mining, petroleum and gas extraction, manufacturing, energy generation or construction industries, while 16.3 percent work in the agriculture, cattle-raising, forestry, hunting or fishing industries. The remaining 3.2 percent of the working population have other occupations. The municipality's net rate of employment is 46.0% of which 67.9% are men and 25% are women, the rest are boys and girls under the ages of 12. The commercial structure is based on self service shops. The tendency to buy the basic products and clothes in the U.S. has declined due to the present economic situation of the country and the peso/dollar exchange rate.

Environmental Justice. The project area has a high Environmental Justice (EJ) index. The EPA Region 6 EJ analysis uses U.S. Bureau of the Census data and is based on a comparison of (1) the percentage of minority people, (2) the percentage of economically stressed households making less than $15,000 a year, and (3) the population within a one-half mile, which is a one square mile area, and a four-mile radius, which is a 50 square mile area, of the site against the corresponding percentages for the state. In view of the demographic and ecological setting of the area, the one-half mile radius EJ index would be expected to be high in view of the high percentage of classified minority population and the high percentage of economically distressed households. The four-mile radius has an EJ index is also expected to be high. Although these criteria are not required in Mexico, coupled with the overall beneficial nature of the environmental impacts associated with the project, the high EJ index gives the project area a high priority and makes it a primary target for assistance.

Cross-border Impacts. There are no identified potential effects beyond the national boundary. Of significant benefit to the general environment is the improved quality of the discharged waters through improvement of the treatment process. A beneficial impact is the reduction of potential health vectors and communicable diseases through the elimination of the potential sources of contamination. Another potential by-product of the proposed WWTP project that may have both adverse and beneficial impacts on the socioeconomic fabric of the area is the increased growth and development. Also, the existence of a WWTP to provide dependable wastewater treatment for the area may make it more appealing to industry and immigrants tending to overload the system. However, these same phenomena may make it possible to improve the socioeconomic well-being of residents of the area.

Other Factors. Other factors evaluated and determined not to be of significant or relevant consequence include radiation, solid or hazardous waste disposal, man-made hazards, natural hazards, and loading on infrastructures, municipal services and support systems, and health services and facilities. The project is not located within an area bordering the Gulf of Mexico and there are no coastal zone management areas that will be affected by the project.

4.0 OTHER ENVIRONMENTAL ISSUES CONSIDERED BY EPA

4.1 Unavoidable Adverse Effects. The most unavoidable adverse impacts are related to the construction and restoration of the WWTPs. The alteration of air quality as well as noise generated will be of a temporary nature and no significant adverse impacts on the natural resources, water, wastewater, community infra-structures, school system, medical care, public safety, recreation or transportation resources are expected to result from the direct, secondary or cumulative effects of construction or operation of the facilities.

4.2 Relationship Between Local, Short Term Use of the Environment and the Maintenance/Enhancement of Long Term Beneficial Uses.

Construction and operation of the proposed WWTPs will result in medium to high benefits to the health and economy of the area. In the short term, there will be the inconveniences, the dust and sedimentation resulting from the disturbance of the area for the construction, trenching of streets and connecting pathways to the WWTPs. It will be necessary to apply some special mitigation measures in order to reduce the negative effects associated with the construction of the project. However, the long term beneficial uses of the environment will result in better social and community setting because of the correction of a public health and safety hazard. The predicted duration of the restoration and construction works will be up to three years, which will have a favorable impact on the local employment. The reuse of treated sewage will allow the optimization of the resource since this water will be used in agriculture in Irrigation Districts 25 and 26, where approximately 821,422 acres of sorghum grain, maize, sorghum seed and okra are currently being irrigated. The municipality's main perennial crop is pasture.

There are no unacceptable short or long term impacts to sensitive habitat, jurisdictional wetlands, or endangered or threatened species of plants, mammals, birds, reptiles, amphibians, and fishes anticipated as a result of this project. No other local, state, or federal projects are planned or underway in the project area.

4.3 Irreversible and Irretrievable Commitment of Resources.

Irreversibly and irretrievably committed resources associated with the facility are primarily the materials needed for the construction, the fossil fuels and energy resources needed to operate the facility. The proposed WWTPs will results in an irreversible commitment of approximately 420 acres of land. It is not likely that the WWTPs would ever be abandoned and therefore this action constitutes an irreversible commitment of land resources.

5.0 ENTITIES TO WHOM COPIES OF THIS ENVIRONMENTAL ASSESSMENT WERE MAILED FOR REVIEW AND COMMENT

Copies of the Environmental Assessment have been provided to the following agencies and will be provided to groups, officials, and individuals on the general mailing list for review and comment. Interested parties may obtain copies of the Environmental Assessment by contacting the EPA, Office of Planning and Coordination (6EN-XP), 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733, or telephone 214-665-2258.

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
U.S. Natural Resource Conservation Service; District Conservationist
Federal Emergency Management Agency
International Boundary and Water Commission
National Institute of Anthropology and History, Tamaulipas Center
Instituto Nacional de Ecologia, Mexico D.F.
Comision Nacional del Agua (National Water Commission)
Texas Water Development Board
Texas Parks and Wildlife Department
Texas Historical Commission, State Historical Preservation Officer
Texas Natural Resource Conservation Commission

6.0 FIGURES, TABLES AND COORDINATION LETTERS

7.0 REFERENCES AND ENDNOTES